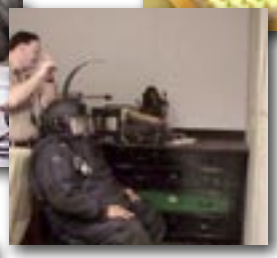
TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

EASE OF USE

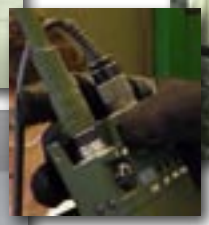
DEXTERITY TESTS



FIELD OF VIEW

GONIOMETER/ RANGE OF MOTION

MISSION SIMULATION



RDECOM

HUMAN SYSTEMS INTEGRATION (HSI) LABORATORY

Human Factors Engineering & Anthropology

US ARMY NATICK SOLDIER RD&E CENTER

US ARMY NSRDEC
WARFIGHTER SCIENCE, TECHNOLOGY & APPLIED RESEARCH DIRECTORATE
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US ARMY NATICK SOLDIER RD&E CENTER

REV 11-17-08 | OPSEC 08-576

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

HUMAN SYSTEMS INTEGRATION (HSI) LABORATORY

FOCUS

Through the systematic application of ergonomic principles to product design, ensure that Warfighter-oriented clothing and individual protective equipment (CIE), tents, shelters, field services equipment, airdrop equipment, food & food services equipment are:

- Compatible with the intended users and the users' physical environment
- Maintain users' health & safety
- Enhances users' functional effectiveness

LABORATORY FACILITIES

- The Laboratory is a newly modernized, 1000 square foot facility, maintained and operated by Human Factors Engineers (HFE) and Anthropology Subject Matter Experts (SMEs).

HUMAN FACTOR ENGINEERING ROLES

Contribute to a product's RDT&E to ensure the User can perform his/her mission safely, efficiently and effectively by:

- **Providing design recommendations to enhance Warfighter-system interfaces by utilizing:**
  - HFE criteria found in relevant standards and Handbooks
  - Heuristic HF evaluation techniques
  - Extensive SME experience
- **Conducting laboratory and field evaluations of:**
  - Initial prototypes
  - Developmental items
  - Commercial off-the-shelf products
  - Source selection candidates
- **Utilizing subjective & objective test methodologies, assess equipment for:**
  - Compatibility of equipment with the User, gear, platform and environment
  - Ease of Use & Safety
  - Comfort
  - User/Mission Acceptability
  - Fit and Accommodation
  - Equipment/system's impact on the user's
    - *Dexterity / Tactility*
    - *Vision*
    - *Hearing and communication*
    - *Range of Motion*
    - *Mission Performance*

ASSETS:

- **Test Participants — Active duty military personnel**
- **Approved Human Use Protocol**
- **Access to other NSRDEC Facilities:**
  - Outdoor Obstacle/MOUT Course
  - 3D Anthropometric Scanning Lab
  - Biomechanics Lab
  - Cognitive Performance Lab
- **Specialized tools & test equipment:**
  - Dexterity/tactility tests (fine/gross)
  - Vision tests (field of view, color/depth perception)
  - Environmental gauges: humidity, temperature, noise & light levels
  - Physical & physiological measuring devices: goniometers anthropometers, digital scale, heart rate monitors, force gauges
- **Extensive selection of legacy and developmental Warfighter-oriented ancillary gear and equipment:**
  - Body armor, helmets, eye/ hand/ footwear, uniforms, cooling garments, mock weapons, load bearing gear
  - Multi-service Chem-Bio ensembles & masks